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"Hydrolysis of the methyl ester of O-phosphoserine"

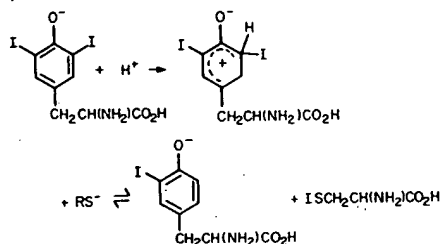
Chem Abstracts 76:46490

1972 year page 402

Fr.). *C. R. Acad. Sci., Ser. B* 1971, 273(11), 376-9 (Fr). Frequencies for glycine are calcd. on the basis of force const. values. Isotope effects for glycine-¹⁵N and glycine-¹⁸O are studied in order to det. the force field. The calcd. frequencies of α , β , and γ forms of glycine are in agreement with exptl. values. Glycine is planar in aq. soln.

46484h New amino acid derivatives from cyanamide and cyanacetamide. Gante, Joachim; Mohr, Guenter (Forschungslab., Firma E. Merck, Darmstadt, Ger.). *Angew. Chem., Int. Ed. Engl.* 1971, 10(11), 807 (Eng). Di-Me cyanimidodithiocarbonate and glycine Et ester or $H_2NCOC(CN):C(SMe)_2$ and DL-methionine Et ester hydrochloride refluxed 6-8 hr with NaOEt (molar ratio 1:1:1) in anhyd. EtOH afforded the amino acid derivs. $X:C(SMe)NHCH(R)CO_2Et$ [I, X = NCN or C(CN)CONH₂ and R = H or (CH₂)₂SMe, resp.]. On refluxing for several hr with equimolar amts. of primary amines in EtOH or with excess 2:1 concd. NH₃-EtOH, I were converted into the resp. hydantoin analogs.

46485j Reaction course in the deiodination of 3,5-diiodotyrosine by cysteine. 1. Hartmann, Klaus; Hartmann, Norbert; Bulka, Ehrenfried (Inst. Physiol. Chem., Ernst-Moritz-Arndt-Univ., Greifswald, Ger.). *Z. Chem.* 1971 11(9), 344-5 (Ger). The title reaction was studied as a model for the

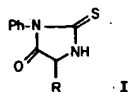


enzymic dehalogenation of 3,5-diiodotyrosine (I). I (in the form of the phenolate anion) was protonated in position 3 of the aromatic nucleus to give a zwitterion, which is attacked by the strongly nucleophilic sulfide ion of cysteine. The C-I bond is broken to give 3-iodotyrosine and ISCH₂CH(NH₂)CO₂H (II). II reacts with cysteine to give cystine and iodide. The rate-detg. step of the reaction at pH 7 and above is the protonation of I. Elimination of halogen then proceeds rapidly.

46486k N-Aryl- β -amino acids. V. Hydrazides of N-aryl- β -alanines. Solomko, Z. F.; Malinovskii, M. S.; Braichenko, V. T. (Dnepropetr. Gos. Univ., Dnepropetrovsk, USSR). *Khim.-Farm. Zh.* 1971, 5(11), 18-21 (Russ). N-Aryl- β -alanine hydrazides ($XC_6H_4NHCH_2CH_2CONHNH_2$) (I) were obtained from methyl esters of β -(arylamino)propionic acid and transformed into dihydrochlorides and hydrazones $XC_6H_4NHCH_2CH_2CONHN:CRR^1$ (X = H, *p*-Me, *o*-Me, *m*-Me, *p*-Cl, *p*-MeO, *o*-NO₂; R = Me, and H; R¹ = Me, C₆H₅NMe₂-*p*). Also prepd. were I (X = *p*-NO₂ and 2-NH₂-4-NO₂). The main products of hydrolysis of I in alk. medium are β -arylamino propionic acids. I did not yield 1,3,4-oxadiazoles (II) in the usual way but gave N¹-(N-phenyl- β -alanyl)-N²-benzoylhydrazine. II were obtained from hydrochlorides of methylimino esters of I. Dihydrochlorides of I (X = H, *p*-Me, *m*-Me, and *p*-MeO), in 1:8000 diln. have a weak bacteriostatic activity for acid-resistant bacteria, and when X = *o*-Me a germostatic activity against most microorganisms is present.

46487m Optical rotatory dispersion and circular dichroism. LXXV. Circular dichroism of some arylamino acids. Klyne, W.; Scopes, P. M.; Thomas, R. N. (Westfield Coll., Hampstead/London, Engl.). *Helv. Chim. Acta* 1971, 54(8), 2420-30 (Eng). CD curves were recorded for α -aryl- α -amino acids, esters, and amides related to α -phenylglycine, α -phenylalanine, and their N,N-dimethyl derivs., and the corresponding α -cyclohexyl- α -amino acids and esters. Compds. with the S configuration at the single asym. C atom give strong pos. Cotton effects near 220 nm. The conformations of the acids are discussed and compared with those of other α -amino acids.

46488n NMR study of some phenylthiohydantoins of α -amino acids. Bouguerra, Mohamed L.; Leraux, Yves (Inst. Natl. Sante Rech. Med., Hop. Henri Mondor, Creteil, Fr.). *C. R. Acad. Sci., Ser. C* 1971, 273(16), 991-3 (Fr). The NH

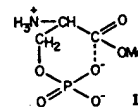


and CH signals of I are only slightly affected by the nature of the R group. NMR spectra data for I (R = α -amino acid residue) are given. Derivs. studied are those of glycine, alanine, aspartic acid, asparagine, glutamic acid, glutamine, and tyrosine. I are prepd. by the Edman reaction.

46489p Synthesis of some derivatives of 4-phenoxythiincarcboxylic acid. Wu, M. T.; Gay, W. A.; Lyle, R. E. (Dep. Chem.,

Univ. New Hampshire, Durham, N.H.). *J. Heterocycl. Chem.* 1971, 8(6), 943-5 (Eng). Prepn. of a series of amino acid derivs. of 4-phenoxythiincarcboxylic acid is described.

46490g Hydrolysis of the methyl ester of O-phosphoserine. Ayaeva, S. M.; Sklyankina, V. A. (Mosk. Gos. Univ., Moscow, USSR). *Zh. Obshch. Khim.* 1971, 41(9), 2081-5 (Russ).



Hydrolysis of the Me ester of O-phosphoserine at 100° in H₂O or various buffers (citrate, phosphate, hydroxylamineacetate) gave largely Me ester of serine with a moderate amt. of O-phosphoserine and free H₃PO₄. The results were tabulated and rate consts. reported for pH 6.1 to 7.1. The very rapid hydrolysis in the pH 5-8 interval was noted with the reaction being accelerated by both acids and bases. Probably a cyclic intermediate transition state such as I takes part. G. M. Kosolapoff

46491h Magnetic resonance study of radical recombination in irradiated cysteine hydrochloride monohydrate. Ramsbottom, J. V.; Pintar, M. M.; Forbes, W. F. (Dep. Statist., Univ. Waterloo, Waterloo, Ont.). *Radiat. Res.* 1971, 48(3), 443-62 (Eng). Radical recombination reactions in samples of irradiated cysteine hydrochloride monohydrate were investigated, using EPR and NMR spectroscopy. Radicals were induced by uv light and by γ -irradn. Two phases were identified in the crystals, and recombination rates of the S radicals were different in both phases. One phase represented a glassy phase which showed unusual NMR properties, particularly at 393°K when vigorous motion appeared to average out almost all of the dipolar line width. This phase was not detected in anhyd. cysteine hydrochloride. Possible mechanisms of the recombination reactions were discussed, consistent with the exptl. detd. activation energies in the two phases.

46492j New method of polypeptide synthesis. Mutter, Manfred; Hagenmaier, Hanspaul; Bayer, Ernst (Univ. Tuebingen, Tuebingen, Ger.). *Angew. Chem. Int. Ed. Engl.* 1971, 10(11), 811-12 (Eng). A peptide is prepd. in homogeneous phases by the use of a C-terminal amino acid protected by a sol. polymer carrier. Protected glycine is esterified with a poly(ethylene glycol); Ile-Ala-Val-Gly-OH (I) is prepd. by 2 different methods. The protected tetrapeptide is treated with NaOH in order to sep. I from the polymer carrier.

46493k Solid-phase synthesis of luteinizing hormone-releasing hormone. Rivaille, Pierre; Robinson, Arthur; Kamen, Martin; Milhaud, Gerard (Serv. Biophys., Fac. Med. St.-Antoine, Paris, Fr.). *Helv. Chim. Acta* 1971, 54(8), 2772-5 (Fr). The peptide pyro-Glu-His-Trp-Ser-Tyr-Gly-Leu-Arg-Pro-Gly-NH₂ (I) is prepd. on a benzhydrylamine resin. Amino acids protected by a CO₂Bu-*tert* group are used in the prepn. of I which is sepd. from the resin by treatment with liq. HF in the presence of anisole and indole. The resin is prepd. via benzoylation of a polystyrene-divinylbenzene substrate.

46494m Separation of amino acids and related compounds. V. Racemization test in peptide synthesis by the use of an amino acid analyzer. Izumiya, Nobuo; Muraoka, Masako; Aoyagi, Haruhiko (Fac. Sci., Kyushu Univ., Fukuoka, Japan). *Bull. Chem. Soc. Jap.* 1971, 44(12), 3391-5 (Eng). Several tripeptides, Gly-DL-Ala-Q, in which Q residues are DL-alanine, L-valine, L-leucine, L-phenylalanine, L-proline, and L-serine were synthesized and the sepn. of each glycytripeptide diastereoisomer by an amino acid analyzer was studied. Among six peptides studied, diastereoisomeric mixts. of Gly-DL-Ala-L-Val and Gly-DL-Ala-L-Leu were sepd. completely. A procedure to det. the amts. of LL and DL diastereoisomer of Gly-Ala-Leu by the use of the analyzer was developed, and this procedure was applied to exam. the influence of coupling reagents for racemization during coupling of (benzyloxycarbonyl)glycyl-L-alanine and L-leucine benzyl ester by several reagents.

46495n Synthesis of [1-(¹⁴C)-hydantoinic acid, 5-valine]-angiotensin II and the copolymer of poly-succinyl-lysine with [1-glycine, 5-valine]-angiotensin II. Romanovskii, P. Ya.; Muiznieks, V.; Cipens, G. (Inst. Org. Sint., Riga, USSR). *Khim. Prir. Soedin.* 1971, (5), 655-60 (Russ). 1-Glycine-angiotensin was treated with NaOCN in phosphate buffer (pH 6) for 16 hr and the H₂NCO group attached to tyrosine was split off at 30° at pH 9 in 3 hr, to obtain (1-hydantoinic acid)-angiotensin II which had 1.5 times the pressor activity of the natural hormone. The synthesis was repeated with NaOCN contg. ¹⁴C. Poly(succinyl-lysine) (C₁₀H₁₆N₂O₄)_n was synthesized from poly(lysine-HBr) in borate buffer (pH 9.5) and succinic anhydride, and condensed (24 hr) with 1-glycine-angiotensin II in an aq. dioxane soln. Et₃N in the presence of the *p*-toluenesulfonate of cyclohexyl-[2-(4-methylmorpholinyl)ethyl]carbodiimide to give poly(succinyl-lysine)-(1-glycine)-angiotensin II. V. Bikerman

46496p Stable free radical for the investigation of hydrogen abstraction reactions in aqueous solution. Dearden, J. C.; Odusina, A. O. (Sch. Pharm., Liverpool Polytech., Liverpool,